Lab 5: PID Controller Design

*ECE 564: Fundamentals of Autonomous Robots Lab*

*Team 1: Jacob Cassady, Chase Crutcher, and Olalekan Olakitan Olowo*

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*The group members have worked together and face-to-face at all stages of this project work. The contributions of members to the report and to the codes are equal.*

*(Initials of group members)*

# Introduction

# Lab Parts

## Primitive Wall Follow

### Quick Turn Wall Follow

#### Algorithm



#### Experiment

### Primitive Gentle Turn Wall Follow

#### Algorithm



#### Experiment

### Analysis

## Wall Following with P (Proportional) Controller Primitive Wall Follow

### Algorithm



### Kp = 0.01

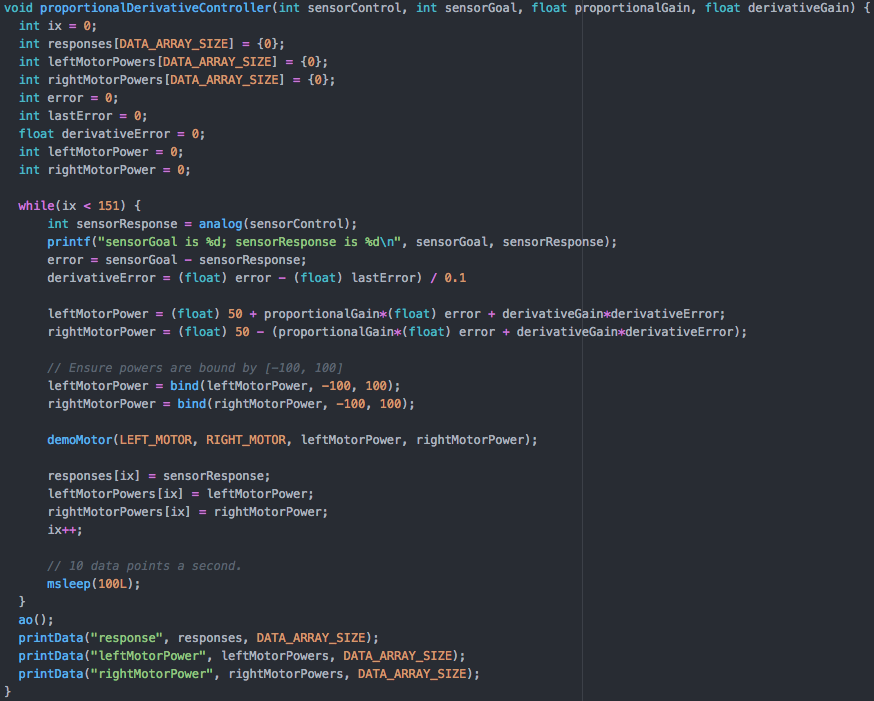
### Kp = 0.04

### Kp = 0.0075

#### Analysis

## Wall Following with PD (Proportional and Derivative) Controller

### Algorithm

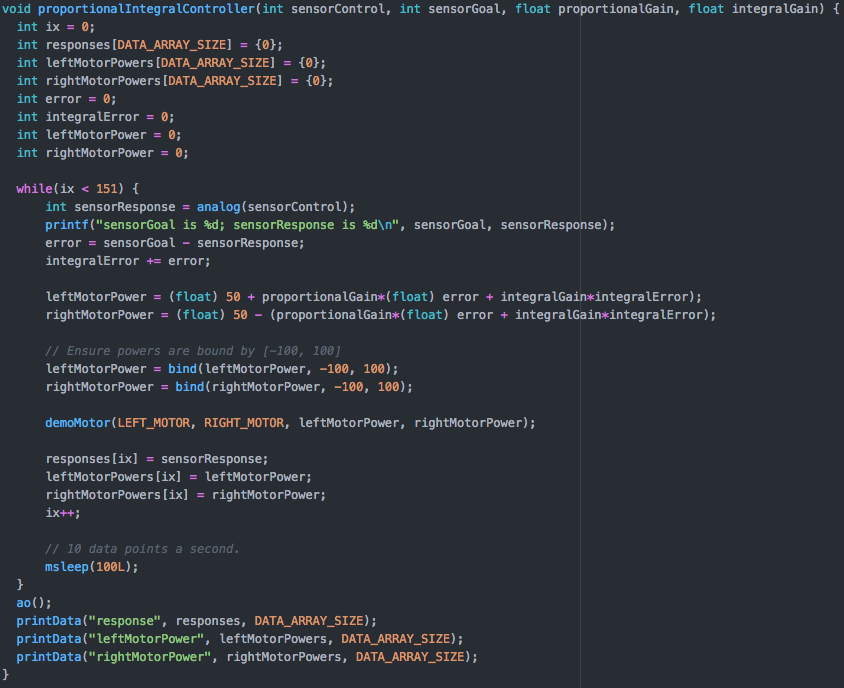


### Kp = 0.02, Kd = 0.000076

### Analysis

## Wall Following with PI (Proportional and Integral) Controller

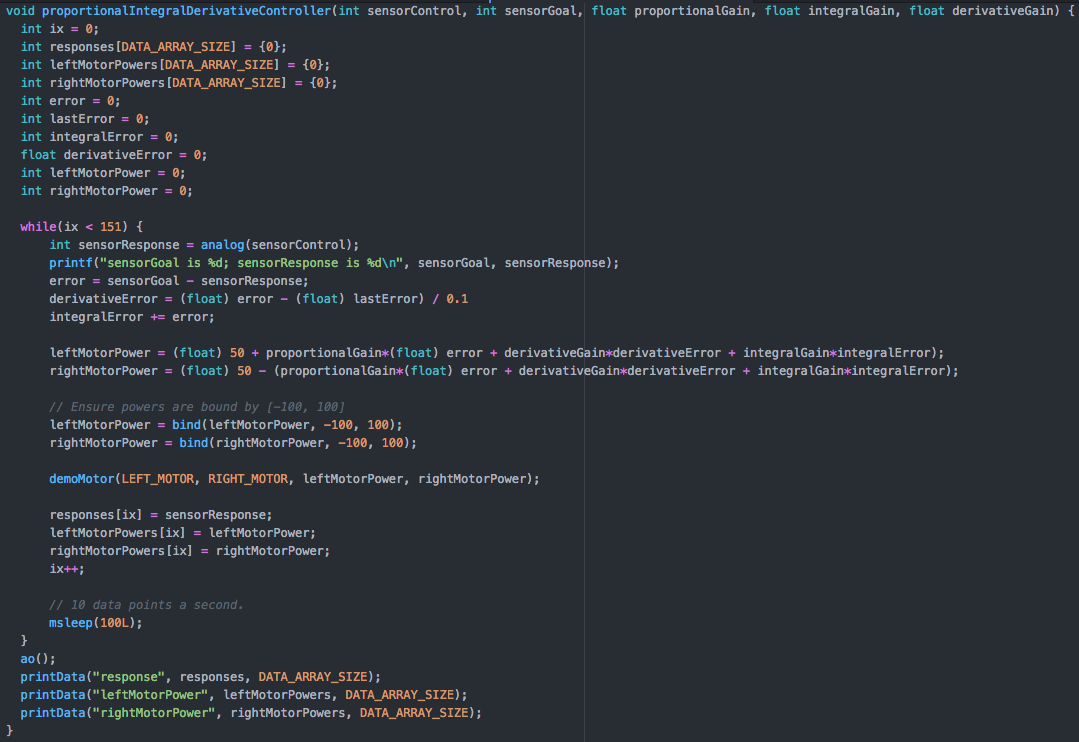
### Algorithm



### Kp = 0.075, Ki = 0.0005

## Wall Following with PID (Proportional, Integral, and Derivative) Controller

### Algorithm



### Kp = 0.02, Ki = 0.000076, Kd = 0.0002

# Conclusion

# Suggestions